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09/877,217

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Ikuya Tsurukawa

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11/21/2006

C. IRVIN MCCLELLAND

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.

1940 DUKE STREET

ALEXANDRIA, VA 22314

EXAMINER

TAMAI, KARL I.

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 11/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/877,217

Applicant(s)

TSURUKAWA ET AL.

Examiner

Tamai I.E. Karl

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

This Office Action contains the same objections and rejections as the Office Action mailed 10/13/2006. The Office Action is being remailed by the request of the Applicant because the newly cited Yamaguchi reference was not cited on the PTO-892.

Claim Objections

1. Claims 1-29 are objected to because of the following informalities: it is unclear if the baseboard is formed of a conductive material with an additional conductive, plane, patterned material mounted on the baseboard, or if part of the baseboard in a conductive material which is conductive, plane, and patterned. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 12-14, 20, 21, and 26 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Ooyama et al. (Ooyama)(JP 56-88650). Ooyama teaches a DC motor having a stator 4 opposed to the rotor magnetic poles 8 with a commutator having flat disc portion 10D with electrical parts 12 to reduce noise mounted on a flat surface on the rotor side and a plane conductive pattern forming planar contact electrodes 11A, 11B, 11C and risers 11A-1, 11B-1, 11C-1 on the second flat surface and with a shaft

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perpendicularly intersecting the electrical parts mounting baseboard, and having a pair of electrical brushes in sliding contact with the electrode part to provide power to the rotor coils where each pair of brushes includes first and second separate portions in sliding contact with the contact electrodes which inherently cause a phase difference due to a shift in the rotational angle of the sliding contacts of the separate portions relative to the contact electrode part. Ooyama teaches the brushes mounted on a support base 2.

4. Claims 1, 2, 4, 12-14, 20, 21, and 26 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Yamaguchi et al. (Yamaguchi)(JP 08-331812). Yamaguchi teaches a dc motor with a stator having magnetic field 9, a rotor 6 with shaft 7 and coils, a disc shaped commutator 1 with baseboard supporting electrode parts 1a-1f and a plane conductive pattern 2 on the second surface and a electrical resistors 5 mounted on the first side. The resistor reducing sparking and inherently reducing noise. The motor including a support base 12 with terminals 13.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ooyama et al. (Ooyama)(JP 56-88650) and Mabuchi (US 4228376). Ooyama teaches every aspect of the invention except the brushes having external terminals. Mabuchi teaches the brushes include terminals 4 for connection to a power supply. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of Ooyama with brushes including terminals for easy assembly of the brushes as taught by Mabuchi.

8. Claims 5, 7, 8, 9, 15, 17, 23, 24, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ooyama et al. (Ooyama)(JP 56-88650) and Yaguchi et al. (Yaguchi)(JP 06-189504). Ooyama teaches every aspect of the invention except a rotational detection brush and the angle of the brush being $180/n$ and the rotor position brush having separate portions. Yaguchi teaches that DC motor are provided with

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rotation detection brushes to surely determine the speed and direction of the motor.

Yaguchi teaches the angle of the brush is a result effective variable. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of Ooyama with the rotation detection brush to provide accurately determine the speed and direction of the rotor, as taught by Yaguchi, and with the angle of the brush being $180/n$ to optimize the position of the rotation detection brushes, and because it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (see *In re Aller*, 105 USPQ 233), and with the same brushes for the electrode brushes and position detection brushes to simplify production and assembly.

9. Claims 6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ooyama et al. (Ooyama)(JP 56-88650) and Yaguchi et al. (Yaguchi)(JP 06-189504), in further view of Mabuchi (US 4228376). Ooyama and Yaguchi teach every aspect of the invention except the brushes having external terminals supported on a base. Mabuchi teaches the brushes include terminals 4 supported on base 6 for connection to a power supply. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of Ooyama and Yaguchi with the brushes including terminals for easy assembly of the brushes as taught by Mabuchi.

10. Claims 10, 18, 22, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ooyama et al. (Ooyama)(JP 56-88650) and Ito (JP 55-133651).

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Ooyama teaches every aspect of the invention except the respective brushes shifted in the radial direction. Ito teaches shifting the commutator brushes in the radial direction to reduce wear. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of Ooyama with the brushes shifted radially to prevent wear as taught by Ito.

11. Claim 11, 25, 19, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ooyama et al. (Ooyama)(JP 56-88650) and Ito (JP 550133651) and Yaguchi et al. (Yaguchi)(JP 06-189504). Ooyama and Ito teach every aspect of the invention except a rotational detection brush and brush arranged at different radial position than the electrode brush. Yaguchi teaches that DC motor are provided with rotation detection brushes to surely determine the speed and direction of the motor. Yaguchi teaches the angle of the brush is a result effective variable. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of Ooyama with the rotation detection brush to provide accurately determine the speed and direction of the rotor, as taught by Yaguchi, and with the angle of the brush being $180/n$ to optimize the position of the rotation detection brushes, and because it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (see *In re Aller*, 105 USPQ 233), and with the rotational and electrode brushes shifted to different radial positions because Ito teach that it reduces wear on the commutator.

Response to Arguments

12. Applicant's arguments filed 3/7/2006 have been fully considered but they are not persuasive. Applicant's arguments that Ooyama does not teach a plane conductive pattern that is formed of a conductive material is not persuasive. Clearly Ooyama teaches the commutator segments 11 are planar and made of a conductive material. Applicant's argument that the conductive plates are inserted on the mounting board is not persuasive because the plates are formed into a plane when inserted into the molded base board 10. Applicant's argument that the circuit board 23 is conductive with a conductive pattern formed thereon is not persuasive because it is not supported by the specification and impractical because the conductive circuit board and the conductive patterns mounted on a conductive board would be all be short circuited.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl I.E. Tamai whose telephone number is (571) 272 - 2036.

The examiner can be normally contacted on Monday through Friday from 8:00 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Darren Schuberg, can be reached at (571) 272 - 2044. The facsimile number for the Group is (571) 273 - 8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Karl I Tamai
PRIMARY PATENT EXAMINER
November 20, 2006



KARL TAMAI
PRIMARY EXAMINER